Air Force Materiel Command

War-Winning Capabilities … On Time, On Cost

Knowledge-Centric Operations (KCO)

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Integrity ~ Service ~ Excellence

Overview

- **The Need for Knowledge Sharing**
- **Air Force's Knowledge Sharing Vision**
- **The Concept of KCO**
  - **Data & Information Management not enough**
- **Pursuing KCO**
- **Measuring KCO Effectiveness**
- **KCO Capabilities Way Ahead**
- **The KCO End State**

The Need…

…for change: "From vertical structures and processes (stovepipes) – to more transparent, horizontal integration (matrix)."

- 2006 QDR

…for incentives: "Information procedures should provide incentives for sharing, to restore a better balance between security and shared knowledge."

-The 911 Commission Report

…for socialization: "By enabling critical relationships between organizations and people, the Department is able to accelerate the speed of business processes, operational decision-making and subsequent actions"

- 2006 QDR

…for learning: to acquire new knowledge … to make better strategic decisions, improve the ability to develop and apply specific tactics, and increase the chance of success in operations

- RAND

…for Decision Superiority: "Better decisions arrived at and implemented faster than an opponent can react—or in a noncombat situation, at a tempo that allows the force to shape the situation or react to changes and accomplish its mission."

- Joint Vision 2020

The Reason…

…we're out of balance: "In light of current workforce demographics, particular attention must be focused on assuring the Air Force captures and makes available the wealth of experience and expertise the current workforce possesses."

-- USAF Strategic Planning Directive for Fiscal Years 2006-2023

…not all knowledge can be captured: "… most of an enterprise's knowledge is tacit (that is, as much as 80 percent to 90 percent of what a person knows will never be captured).

-- Gartner

…they get it: "As technologies and societies change, the nature of the environment faced by both terrorist groups and security forces shifts. The ability of terrorist groups to learn is critical to their adapting to changes…."

-- RAND

…they're ahead: "Our enemies have skillfully adapted to fighting wars in today's media age, but … our country has not …."

-- Donald Rumsfeld

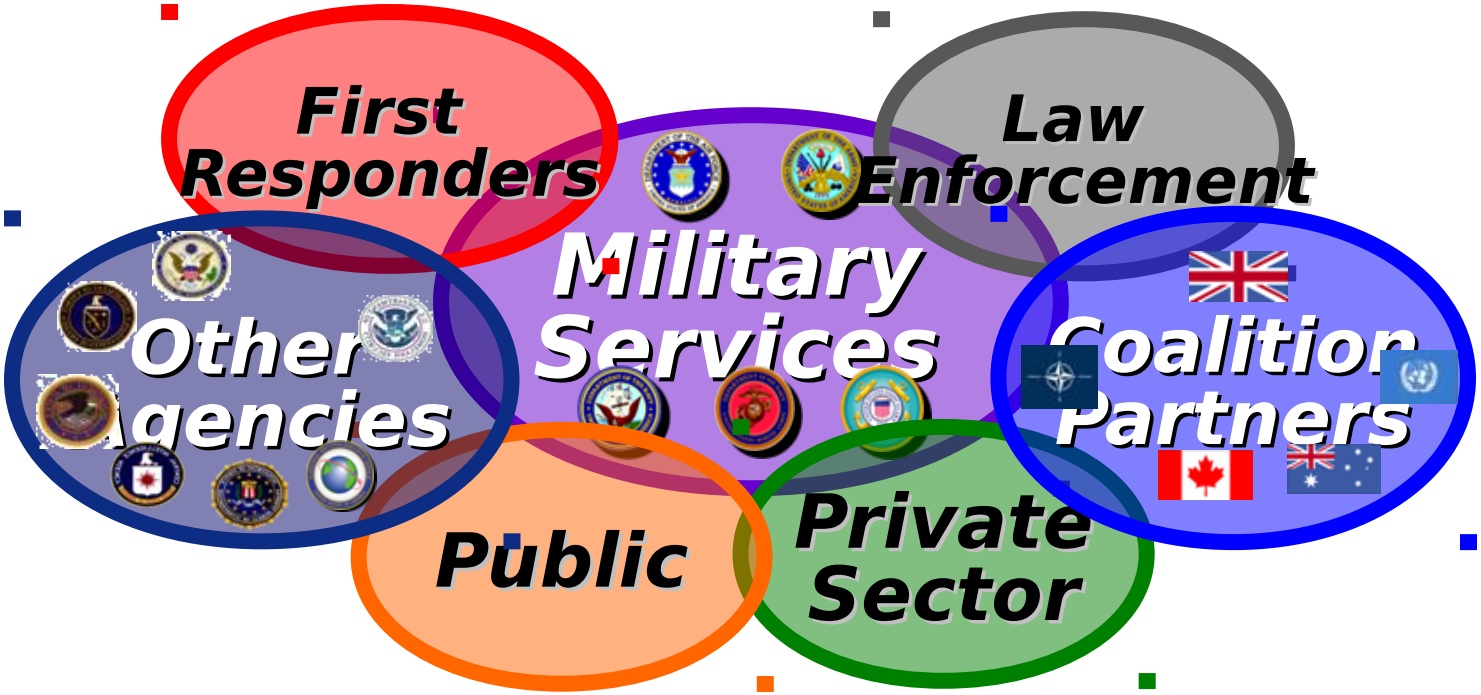
…they're planning to stay ahead: "Muslim youth ought to develop computer proficiency so that they can access and disseminate information using the latest technology from an early age."

-- Abu Musab al-Suri (senior Al Qaeda thinker)

USAF's Knowledge Sharing Vision

Source: Newton, D., Maj Gen. (Jan 2007). "Providing Air, Space & Cyberspace Superiority". Briefing to AFCEA
Northern Virginia's Air Force IT Day, HQ USAF/A3/5.

- **One Team -- Many 'Integrated' Players**



GWOT – Coalition / Interagency participation is the norm

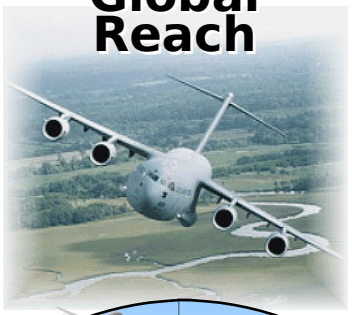
What is the Concept of KCO?

- **Brings human knowledge to bear**
  - **Enabling**
    - Implements Knowledge Management (KM) principles
    - Moves Air Force culture to knowledge sharing
    - Focuses on social-behavioral change
    - Ties knowledge sharing to organization objectives/processes
  - **Supports**
    - Agile Combat Support (ACS) CONOPS
    - Six Operating CONOPS
  - **Provides**
    - Framework to institutionalize a knowledge-sharing culture
    - A means to achieving:
      - Organizational Learning
      - Superiority/Dominance

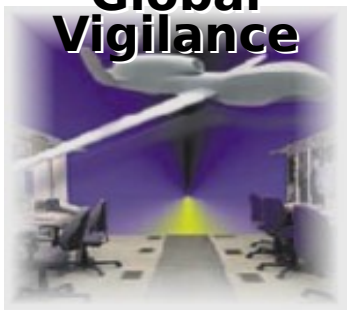
KCO Enables Air Force CONOPS

Global Power

Global Reach



Global Vigilance



Joint Vision

USAF Vision

Air & Space Expeditionary Forces

Global Strike CONOPS	Homeland Security CONOPS	Global Mobility CONOPS	Global Persistent Attack CONOPS	Nuclear Response CONOPS	Space & C4ISR CONOPS

Agile Combat Support CONOPS

Knowledge-Centric Operations (KCO)

What is Knowledge?

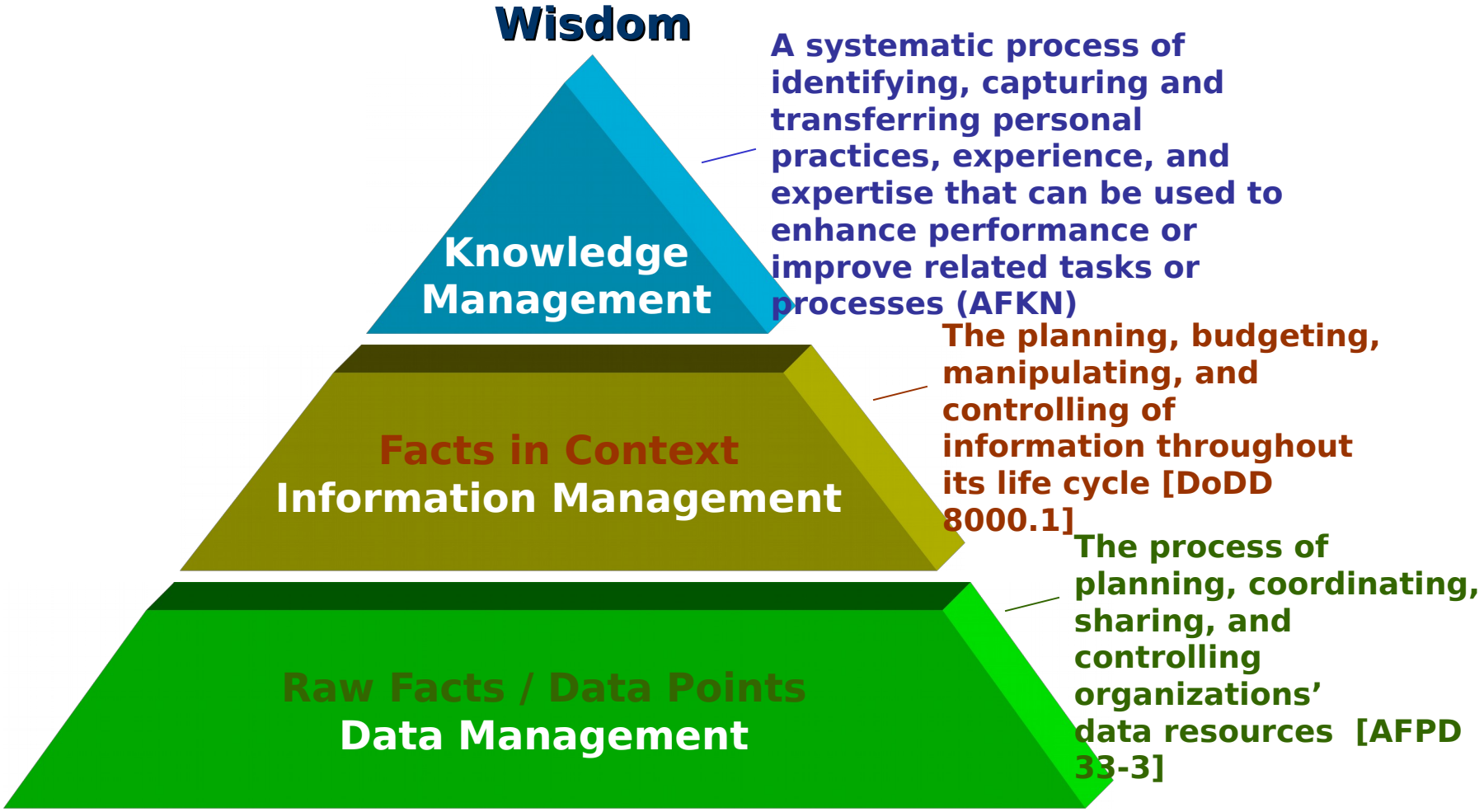
Source: AFPD 33-3, *Information Management* (March 2006)

Knowledge Management (KM)— from Joint Publication 6-0: **"**The handling, directing, governing, or controlling of natural knowledge processes (acquire/validate, produce, transfer/integrate knowledge) within an organization ***in order to achieve the goals and objectives of the organization***."

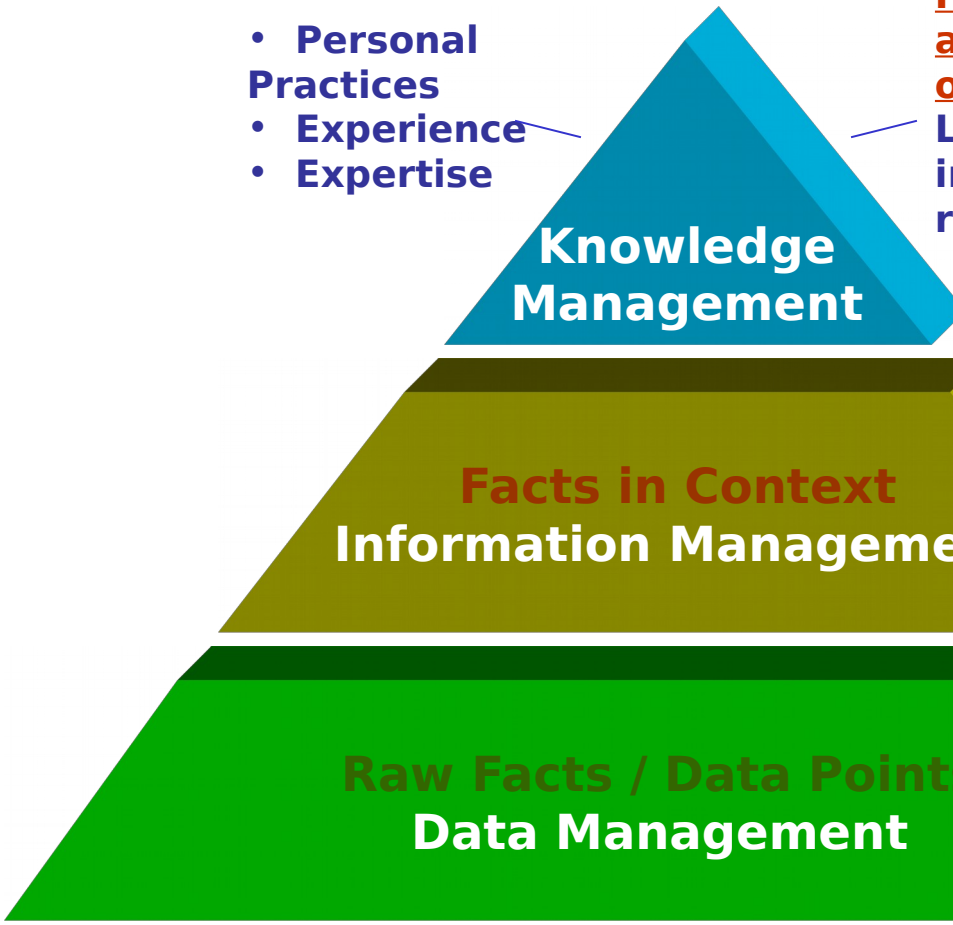
AFPD 33-3: "***KM seeks to make the best use of the knowledge*** that is available to an organization, creating new knowledge, and ***increasing awareness and understanding*** in the process. KM can also be defined as the capturing, organizing, and storing of knowledge and experiences of individual workers and groups within an organization and ***making this information available to others*** in the organization."

Knowledge— ***Information*** from multiple domains ***that has been synthesized, through inference or deduction***, ***into meaning or understanding*** that was not previously known.

Data, Information, Knowledge …


Wisdom
Knowledge Management
Facts in Context
Information Management
Raw Facts / Data Points
Data Management
A systematic process of identifying, capturing and transferring personal practices, experience, and expertise that can be used to enhance performance or improve related tasks or processes (AFKN)
The planning, budgeting, manipulating, and controlling of information throughout its life cycle [DoDD 8000.1]
The process of planning, coordinating, sharing, and controlling organizations' data resources [AFPD 33-3]

Example: Hurricane Katrina



- Personal Practices
- Experience
- Expertise

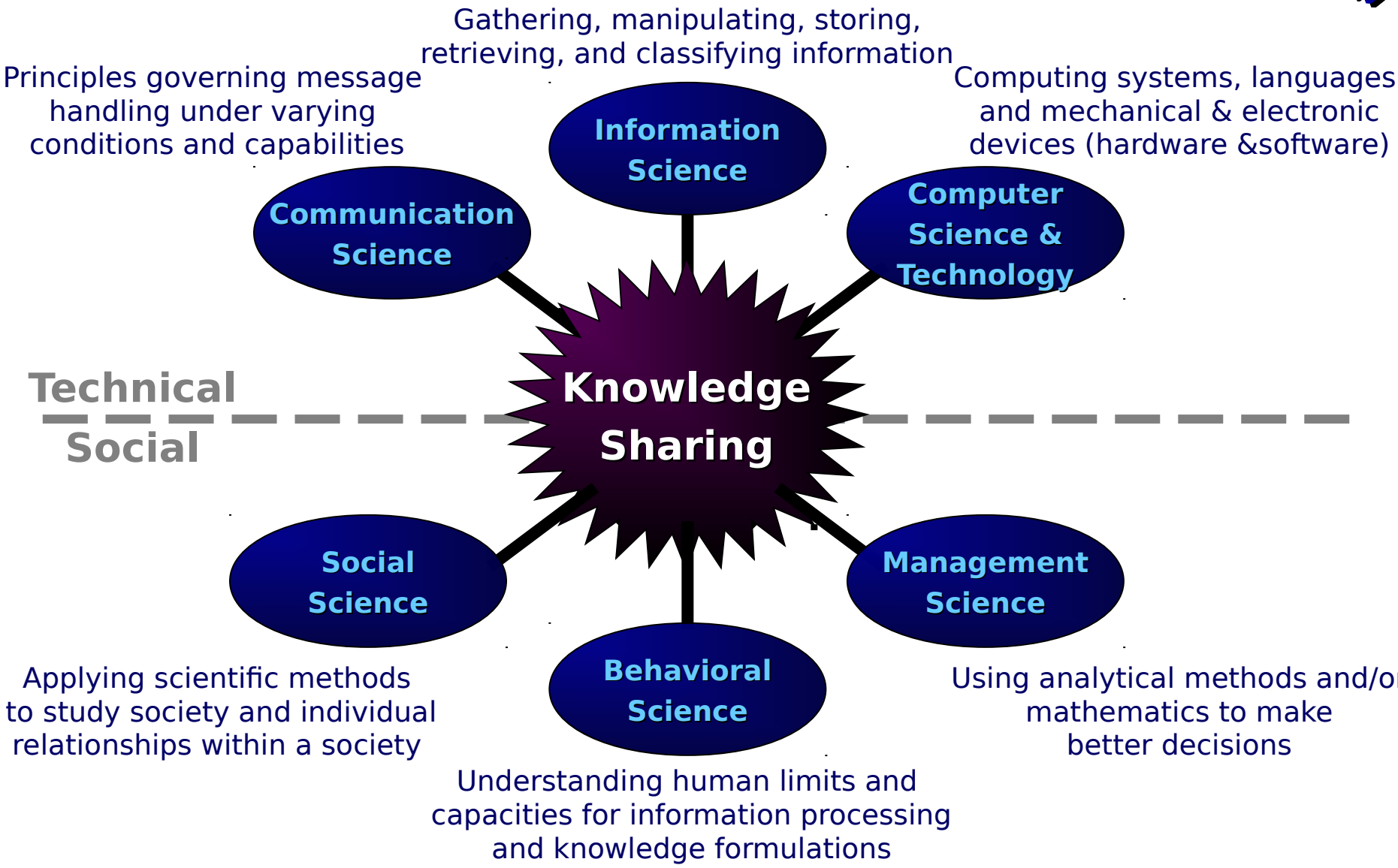
FAILURE of people to apply facts and information to situation and objectives

Local, State, and Federal Govts' inability to collaborate and act resulted in catastrophe

- Projected Path
- Wind/Surge Effects
- Previous Storm Histories
- Levy Vulnerabilities

- Heading
- Wind Speed
- Storm Surge
- Levy Specifications
- Population

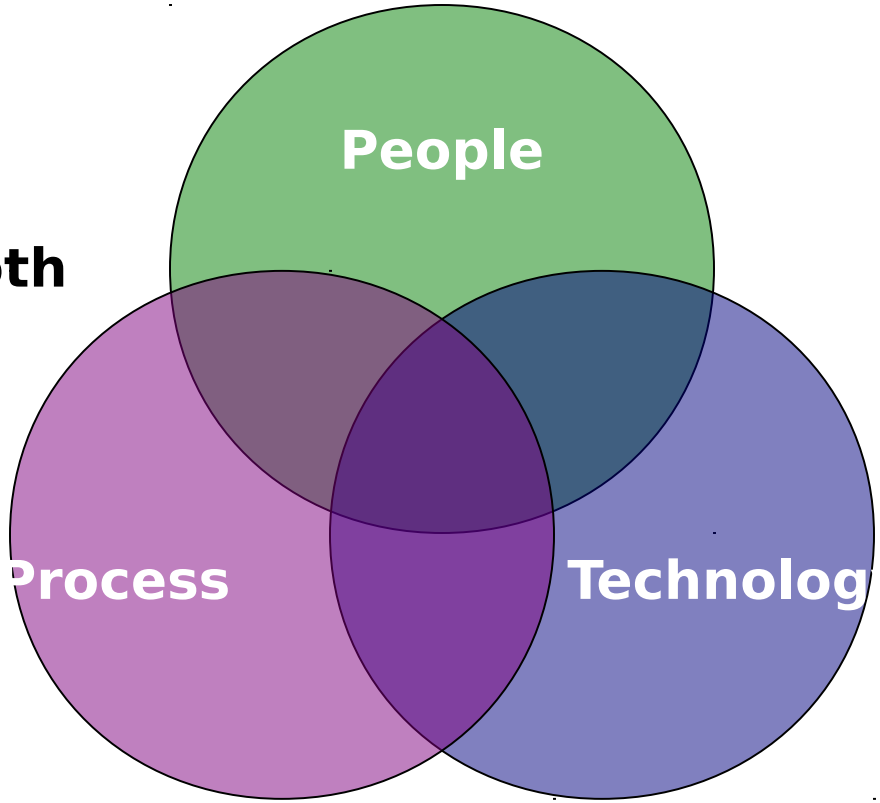
Multi-disciplined Approach


Gathering, manipulating, storing, retrieving, and classifying information
Principles governing message handling under varying conditions and capabilities
Computing systems, languages, and mechanical & electronic devices (hardware &software)
Information Science
Communication Science
Computer Science & Technology
Technical
Social
Knowledge Sharing
Social Science
Management Science
Behavioral Science
Applying scientific methods to study society and individual relationships within a society
Using analytical methods and/or mathematics to make better decisions
Understanding human limits and capacities for information processing and knowledge formulations

Generally-Accepted KM Architecture

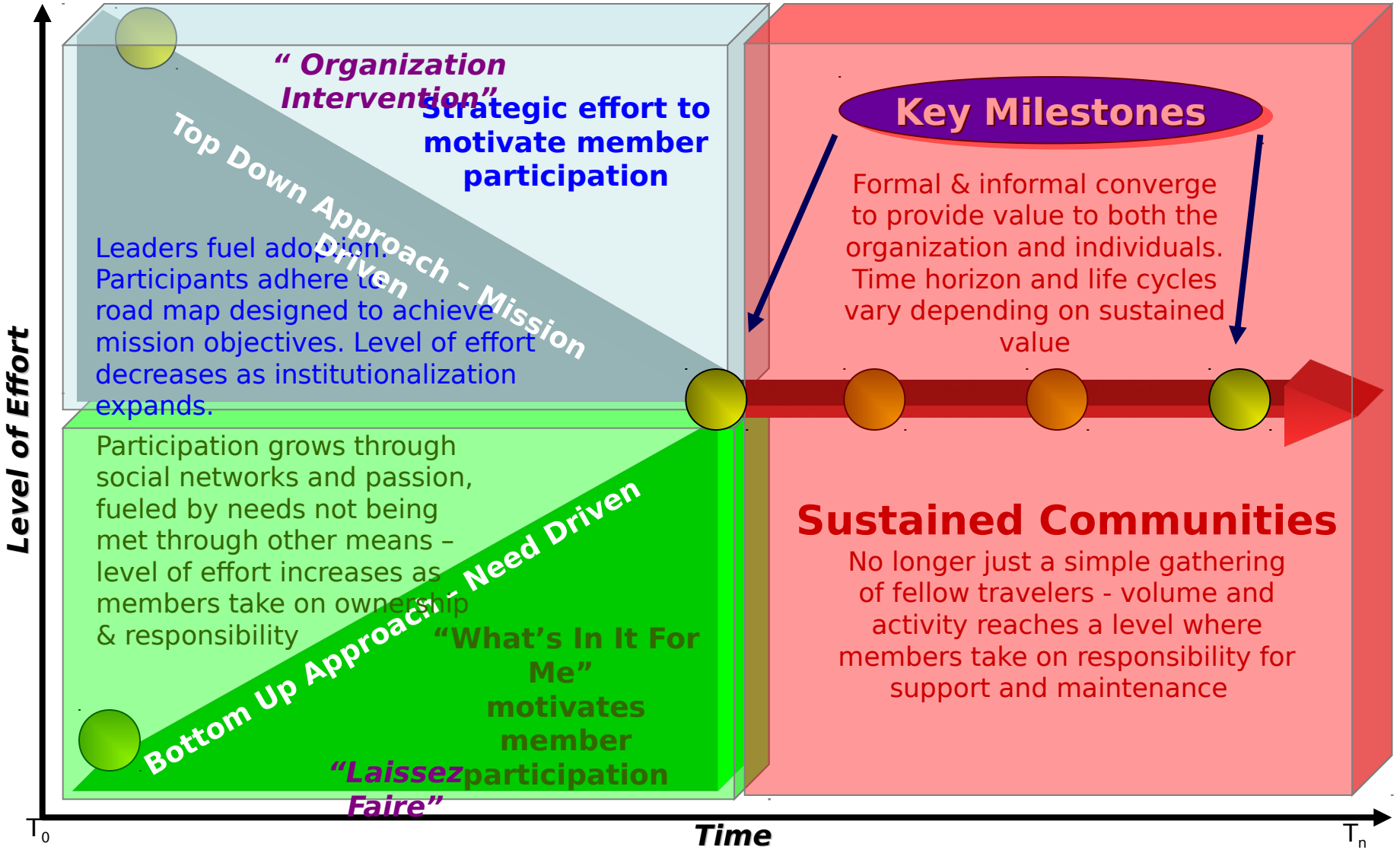
KM integrates three elements

- "People" encompasses both knowledge types
  - Tacit
  - Explicit
- "Process" includes organizational elements and objectives
- "Technology" is only an enabler



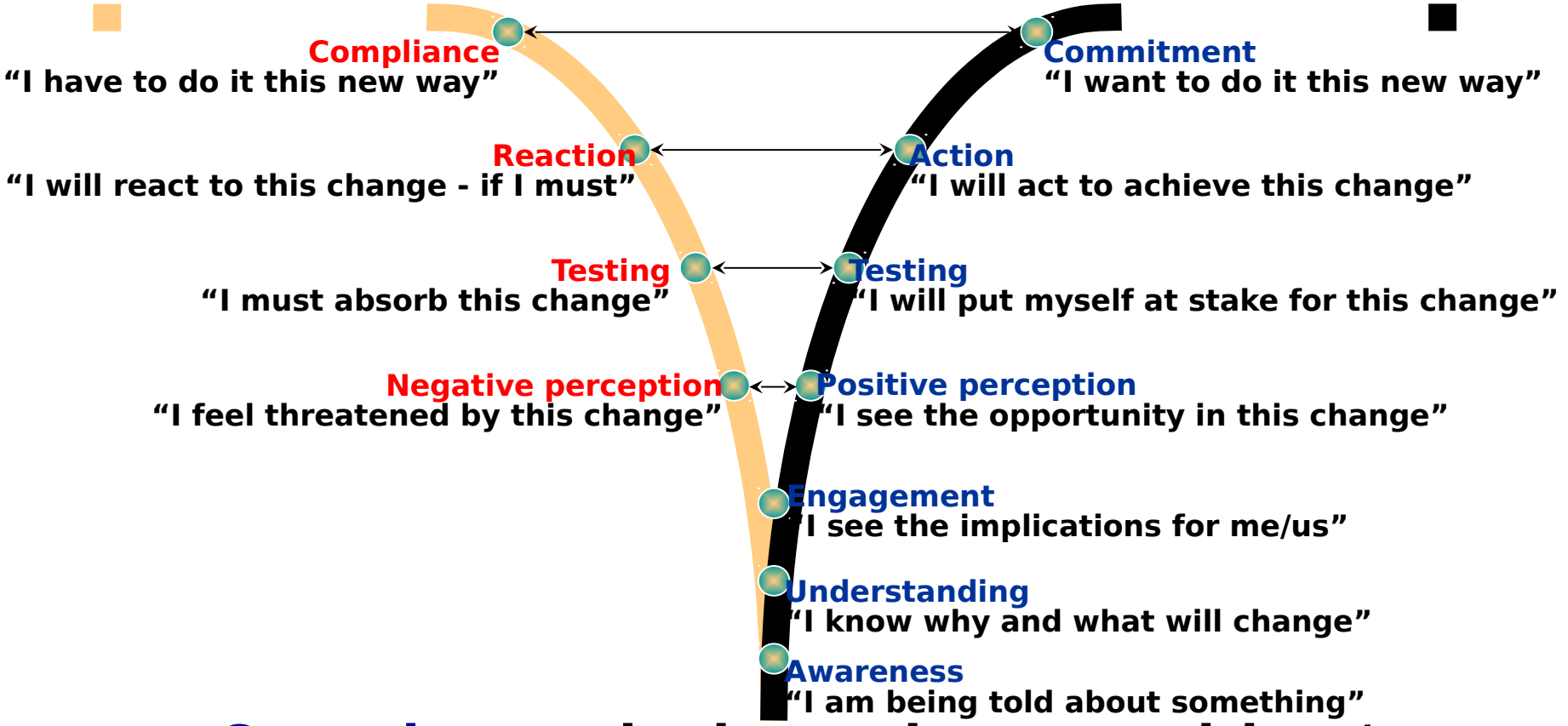
KCO fuses people and content with process

Pursuing KCO: AFKN Team's Practical Experience


Level of Effort
Time
T0
Tn
"Organization Intervention"
Strategic effort to motivate member participation
Top Down Approach – Mission Driven
Leaders fuel adoption. Participants adhere to road map designed to achieve mission objectives. Level of effort decreases as institutionalization expands.
Key Milestones
Formal & informal converge to provide value to both the organization and individuals. Time horizon and life cycles vary depending on sustained value
Sustained Communities
No longer just a simple gathering of fellow travelers - volume and activity reaches a level where members take on responsibility for support and maintenance
Participation grows through social networks and passion, fueled by needs not being met through other means – level of effort increases as members take on ownership & responsibility
Bottom Up Approach – Need Driven
"What's In It For Me" motivates member participation
"Laissez Faire"

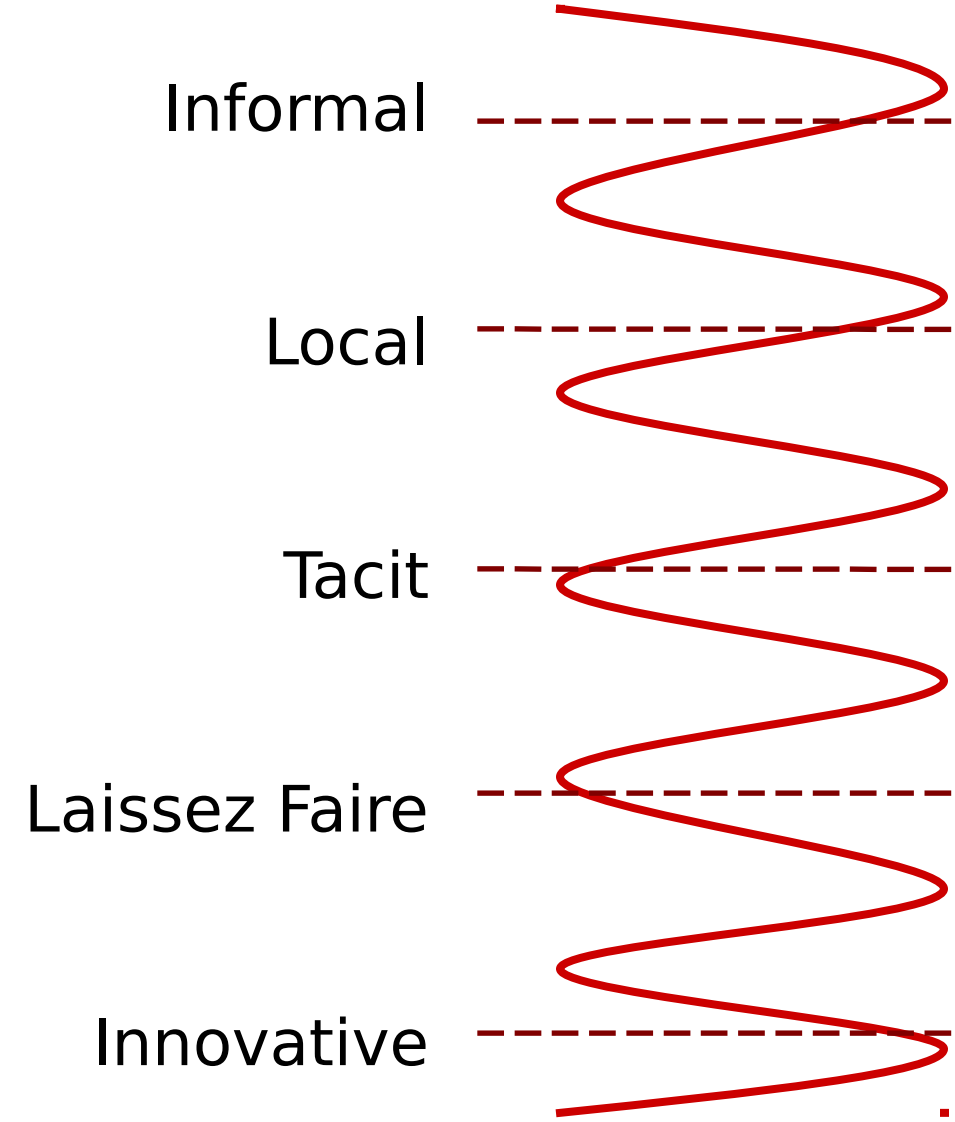
Pursuing KCO: Drive Commitment

Change can be achieved through commitment or compliance


Compliance
"I have to do it this new way"
Commitment
"I want to do it this new way"
Reaction
"I will react to this change - if I must"
Action
"I will act to achieve this change"
Testing
"I must absorb this change"
Testing
"I will put myself at stake for this change"
Negative perception
"I feel threatened by this change"
Positive perception
"I see the opportunity in this change"
Engagement
"I see the implications for me/us"
Understanding
"I know why and what will change"
Awareness
"I am being told about something"

Commitment is the path to transition / transformation

Pursuing KCO: Develop a Knowledge-Centric Balance

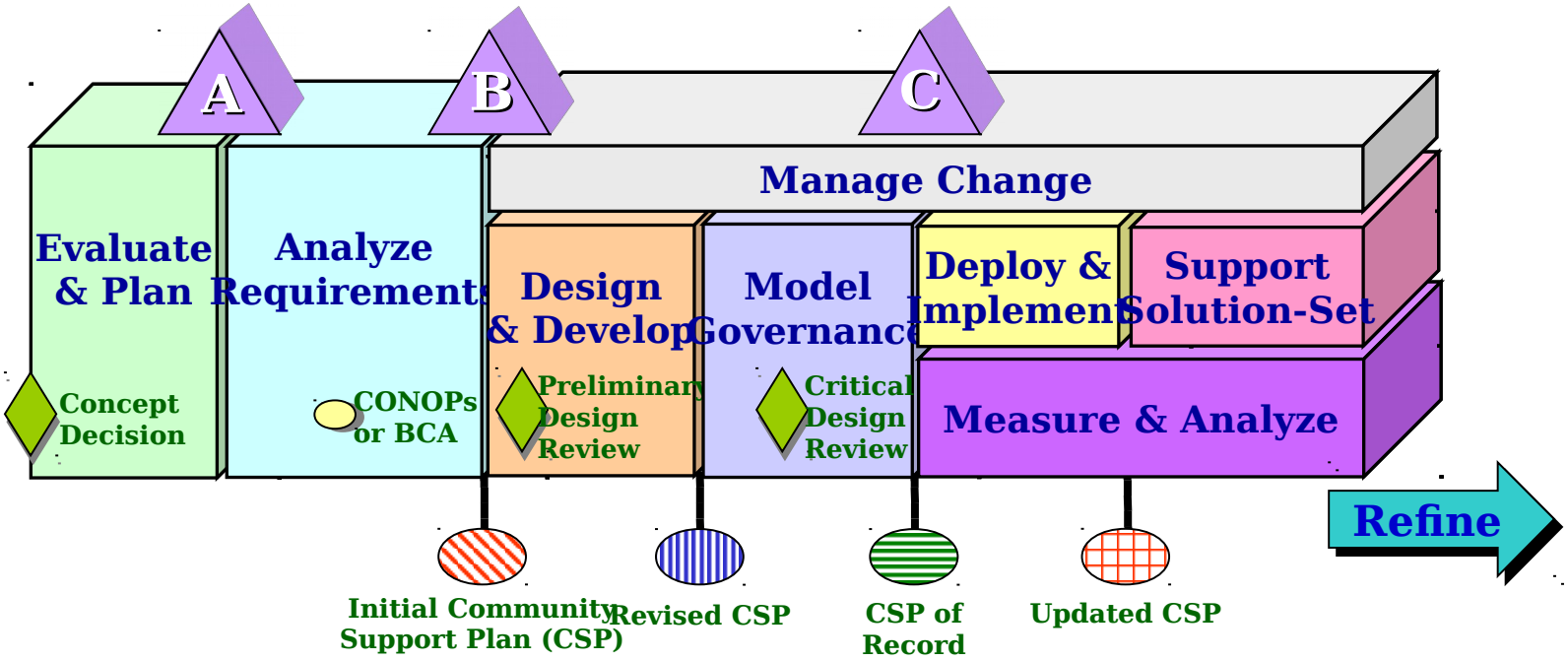


Dynamic Tension

Each organization/community must find the proper knowledge-centric balance among solution variables

No one size fits-all solution exists

Pursuing KCO: AFKN Team's Engagement Cycle



Engage Communities and Organizations

- Advance effort toward milestones (workshops)
- Tie knowledge sharing to strategic objectives
- Pilot quick win/enable continuous improvement

Pursuing KCO: The AFKN Workshop Framework

Thematic Workshop Collections

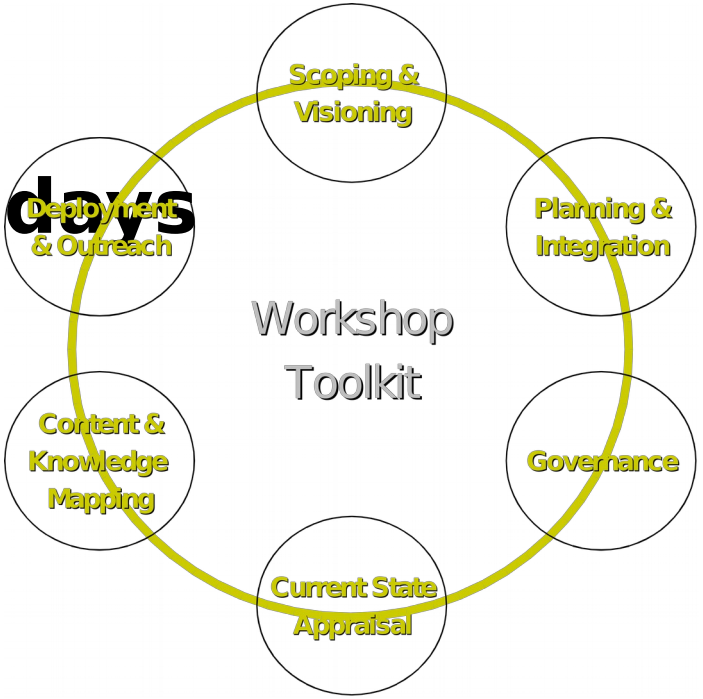
- High Impact / Focused
- Modular / Flexible
- Timely / Fast
- Meaningful / Contextual
- Easy / Efficient

- **Targets unique needs and circumstances**

Pursuing KCO: AFKN's Workshop Framework

- **A workshop ranges 4 - 18 hours in duration …**
- **… spread across 1- to 3-days**

  Flexible to meet objectives and difficult schedules



- **… designed to address unique and special customer needs**

Pursuing KCO: The KCO Maturity Model (K-COMM)

	Intellectual Capital	Resources	Focus	Leadership	Community
5 - Optimized					
4 - Managed					
3 - Defined					
2 - Disjoined					
1 - Initial					

Core Attributes

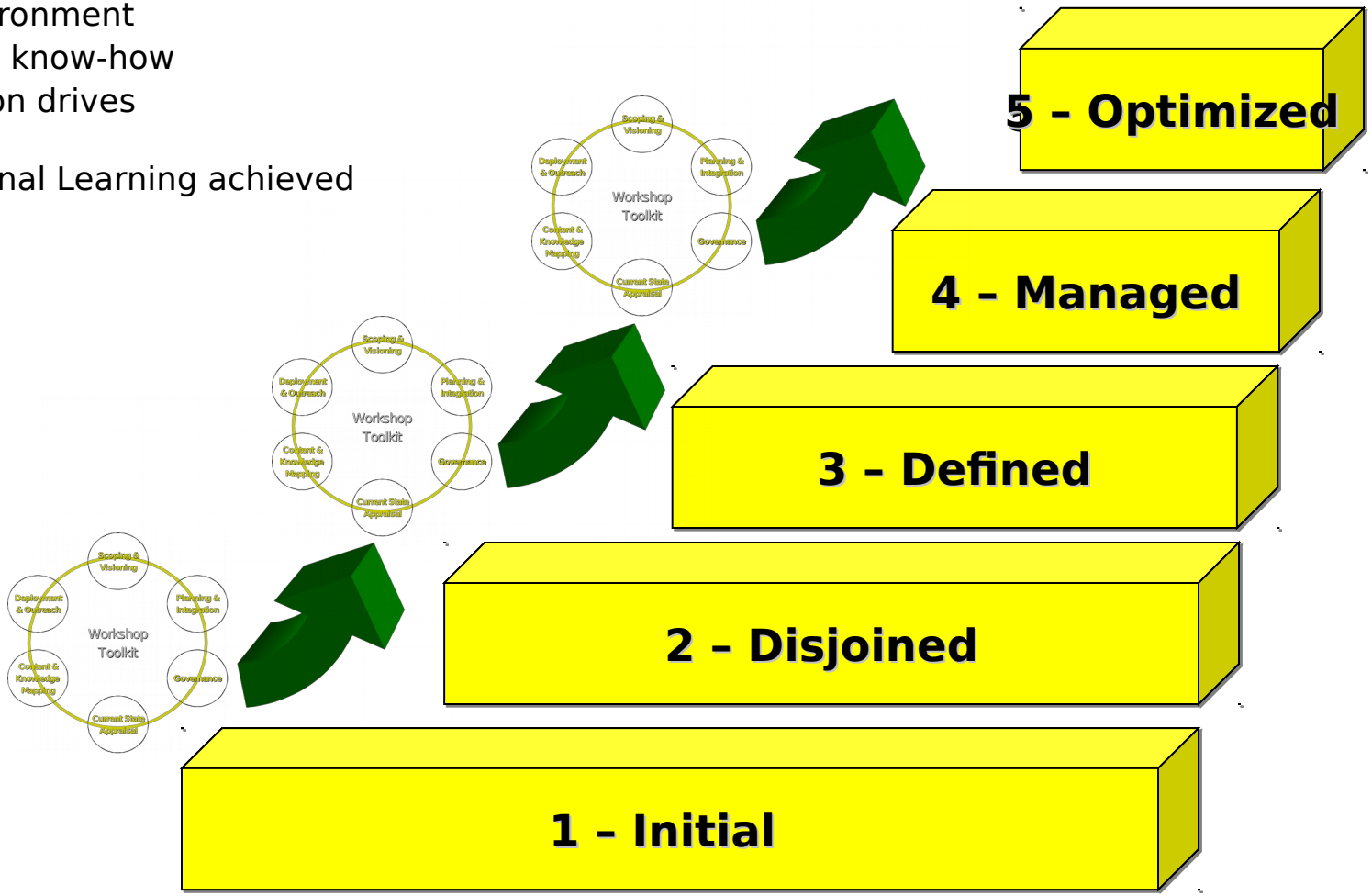
Readiness assessment and prescription tool

- **Based on AFKN experience and organizational development principles**
- **Driven by psychometrics**
- **Baseline for advancing cultural change**

Pursuing KCO: Organizational Development

Spiral to Maturity

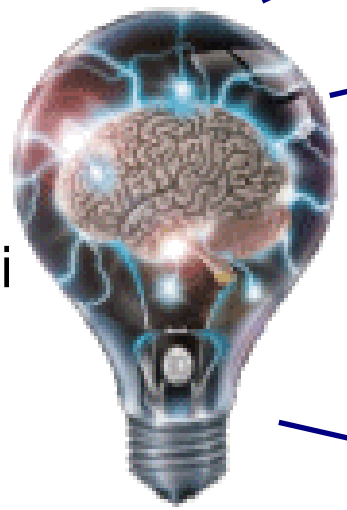
- Create environment
- Users apply know-how
- Collaboration drives innovation
- Organizational Learning achieved



Sample of the KCO Desired Effect

Area Sponsorship: SAF/FM

- ✓ Governance established
  - CKO & KM team created
  - Schoolhouse training provided
  - Mission integrated
- ✓ Knowledge sharing culture insti
- ✓ Cost savings and benefits realized
- ✓ Combat support enhanced



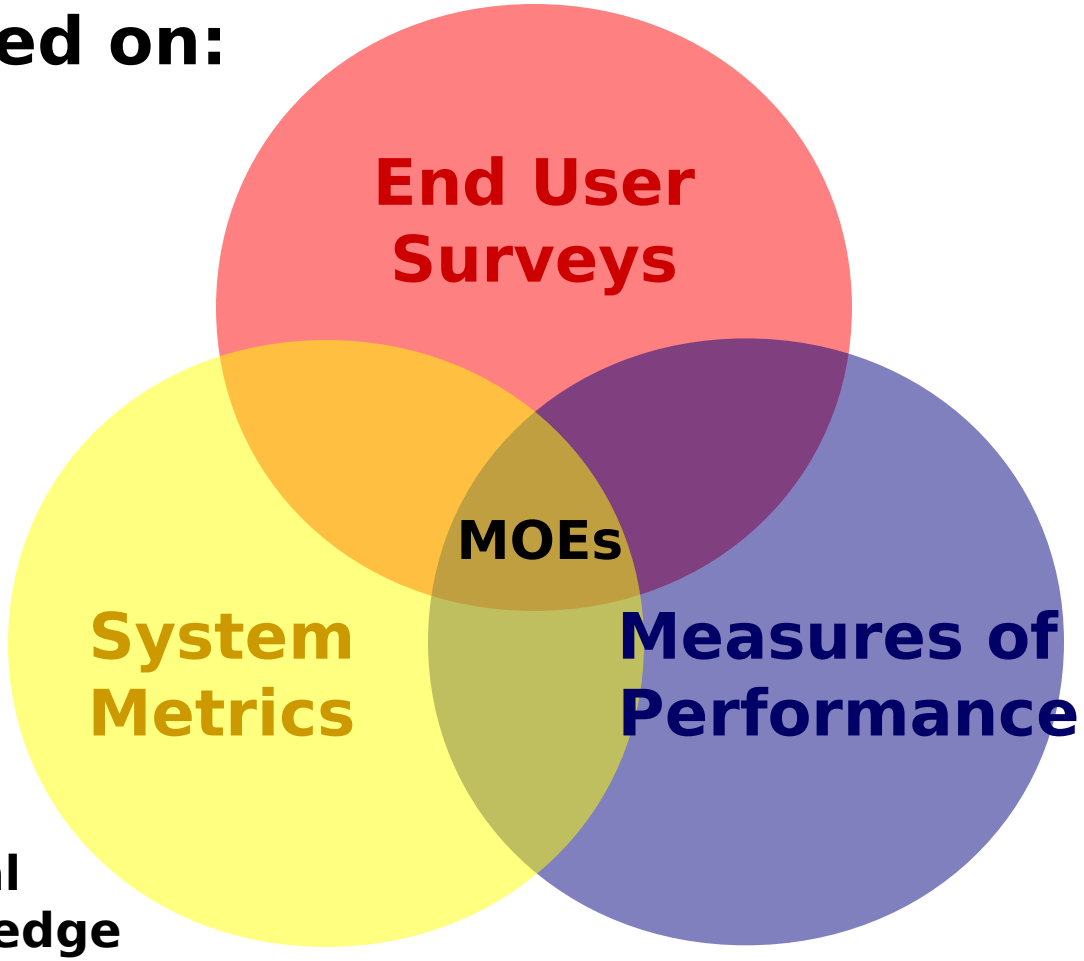
Knowledge Areas/Communities of Practic

- Acq/Program Mgt
- Comm & Info
- Contract Mgt
- Education & Training
- Engineering
- Financial Mgt
- Foreign Mil. Sales
- Inspections
- Intelligence
- Logistics
- Manpower & Personnel
- Medical
- Mission Spt & Civil Eng.
- Operations
- Plans & Programs
- Requirements
- Safety
- Science & Tech.
- Test & Evaluation
- Transformation
- Other

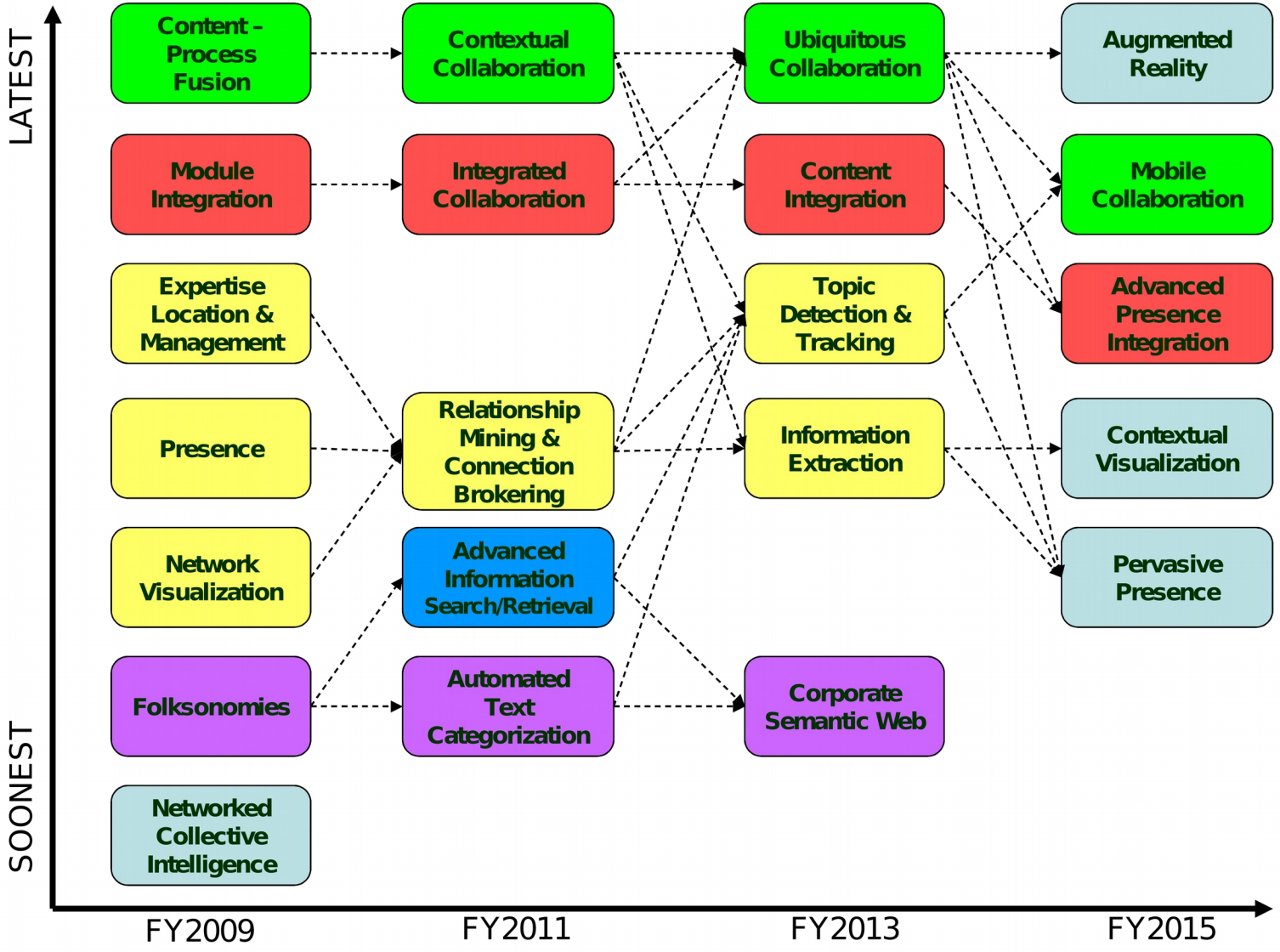
Measuring KCO Effectiveness

KCO MOEs are based on:

- **Existing MOPs**
  - How performance is currently measured (pre-KCO)
- **System Metrics**
  - Knowledge sharing activity and usage
- **End User Surveys**
  - Determine the causal linkages from knowledge sharing activity



Pursuing KCO: Capabilities Way Ahead



A Glimpse of the Future: Objective Airborne Gateway

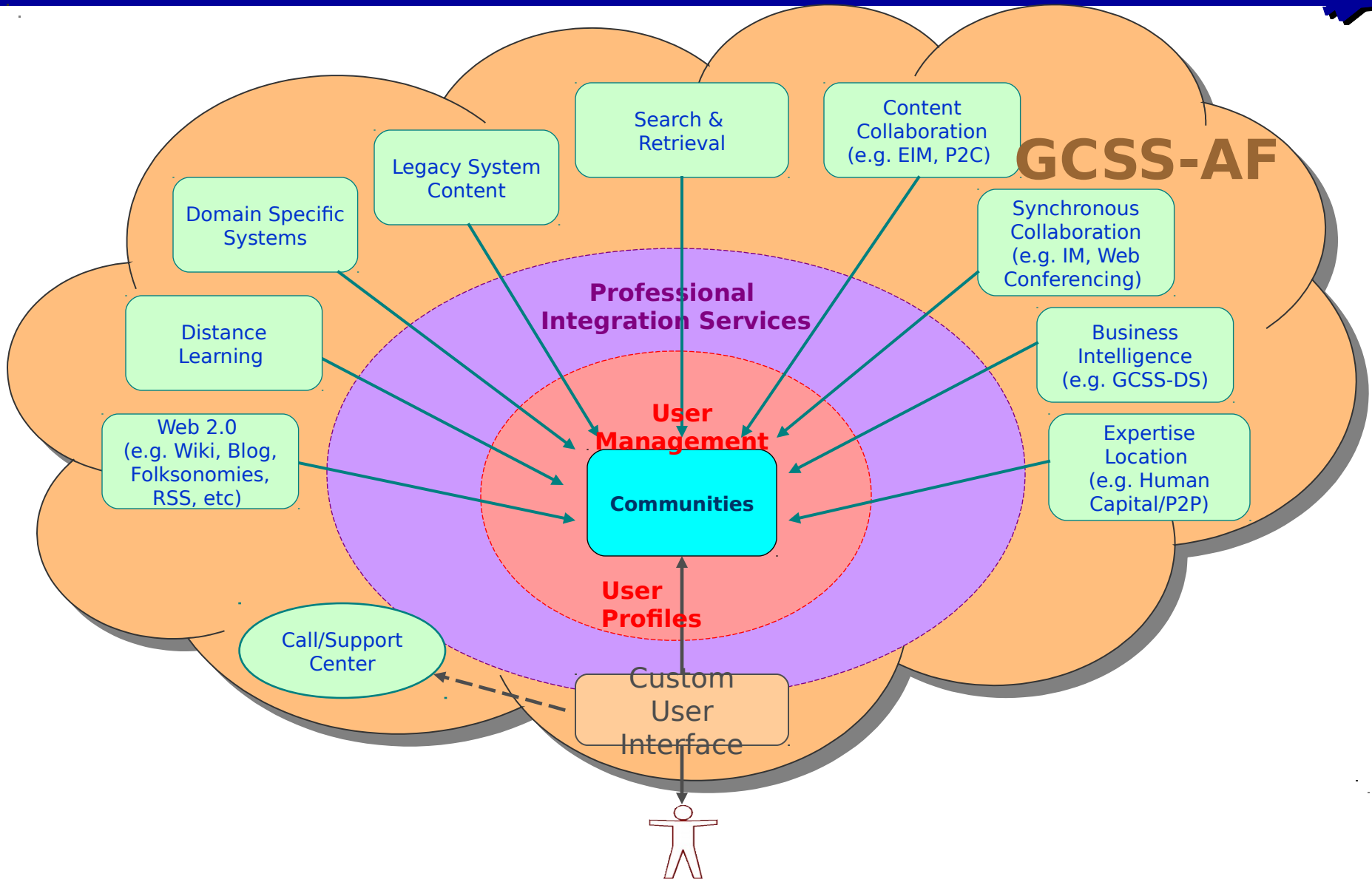
Source: Peterson, M., Lt Gen. (Jan 2007). "Innovate – Integrate - Dominate". Briefing to AFCEA Northern Virginia's Air Force IT Day, SAF/XC.

From concept demonstration in JEFX…

…to established Air Force program

Airborne gateways bridge the air, ground, and space networks

KCO End State:
Virtual Community Architecture



Summary

- **Technology is only an enabler**
  - **A socio-technical approach is required**
- **Top-down or bottom-up approach can succeed**
  - **Convergence allows effort to be self-sustaining**
- **Commitment vs Compliance**
  - **Individual commitment is the path to success**
  - **Knowledge-Centric balance must be achieved**
- **AFKN customer engagement framework**
  - **Workshops facilitate organizational change**
  - **Spirals advance organizations toward maturity**
- **Knowledge begins and ends with people**

Letter to Airmen – 12 Mar 07

“Air and space power is the ability to apply military force from, through and to air and space. Such dominance is not a national right ....

applied their increasing knowledge to develop and exploit new technologies and tactics ....”

Michael W. Wynne
Secretary of the Air Force

Need to know more?

Contact your AFKN KM Architect Team:

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Or

ask for the KM Architect Team when you

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